

Claims

1. A surgical device for use in surgery comprising

5 a mounting element;

 a sealing member of pliable material mounted to the mounting element, the
 sealing member having a normally closed access opening; and

10 at least a portion of the sealing member being movable on insertion of an
 object such as a surgeon's hand to open the access opening whilst maintaining
 substantial sealing engagement with the object.
2. A device as claimed in claim 1 wherein the mounting element comprises a first
15 ring element and a second ring element and the sealing member extends
 between the ring elements.
3. A device as claimed in claim 1 comprising a biasing means to bias the sealing
20 member to close the access opening.
4. A device as claimed in claim 3 wherein the biasing means is provided by pre-
 tensioning the sealing member to close the access opening.
5. A device as claimed in claim 1 wherein the sealing member comprises a
25 sleeve.
6. A device as claimed in claim 5 wherein the sleeve is twisted to define the
 normally closed access opening.

7. A device as claimed in claim 1 wherein the sealing member is of an elastomeric material.
8. A device as claimed in claim 1 comprising a spring element to bias the sealing member to close the access opening.
- 5 9. A device as claimed in claim 8 wherein the spring element extends between the first and second ring elements.
- 10 10. A device as claimed in claim 9 wherein the spring element has opposite ends and at least one of the ends is attached to a ring element.
11. A device as claimed in claim 10 wherein one end of the spring is attached to the first ring element and the other end of the spring is attached to the second ring element.
- 15 12. A device as claimed in claim 11 wherein a first ring element is a fixed ring element and a second ring element is rotatable relative to the first ring element.
13. A device as claimed in claim 2 wherein one ring element is located within the other ring element.
- 20 14. A device as claimed in claim 12 wherein one ring element has a rib which is locatable in a corresponding groove in the other ring element.
- 25 15. A device as claimed in claim 2 wherein the sealing member is a sleeve , one end of the sleeve being mounted to one ring element and an opposite end of the sleeve being mounted to the other ring element.
- 30 16. A device as claimed in claim 15 wherein the sealing member is anchored to both the first and second ring elements.

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17. A device as claimed in claim 15 or 16 wherein the sleeve has a first mounting ring at one end for mounting to the first ring element and a second mounting ring at an opposite end for mounting to the second ring element.
18. A device as claimed in claim 2 wherein the mounting ring elements have locators for a biasing element extending between the ring elements.
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19. A device as claimed in claim 18 wherein the locator comprises a groove.
20. A device as claimed in claim 2 wherein the sealing member comprises a sleeve having an untwisted configuration and a twisted sealing configuration, the sleeve in the untwisted configuration having a length which is less than a diameter of the sleeve.
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21. A device as claimed in claim 2 wherein one ring is rotatable relative to the other ring element.
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22. A device as claimed in claim 1 wherein the mounting element has an attachment for mounting to another device such as a retractor.
23. A device as claimed in claim 22 wherein the attachment comprises a groove.
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24. A device as claimed in claim 22 wherein the other device comprises a sleeve element and the attachment is engagable with the sleeve element.
25. A device as claimed in claim 22 wherein the mounting element is movable relative to the other device.

26. A device as claimed in claim 25 wherein the mounting element is slidable relative to the other device.
- 5 27. A device as claimed in claim 22 wherein the other device comprises a sealing device.
28. A device as claimed in claim 27 wherein the sealing device is located proximally of the sealing member.
- 10 29. A device as claimed in claim 27 wherein the sealing device comprises a lip seal.
30. A hand access device for use in hand assisted laparoscopic surgery comprising a device as claimed in claim 1.
- 15 31. A surgical device assembly comprising a retractor and a device as claimed in claim 1.
32. An assembly as claimed in claim 31 wherein the device is releasably mountable to the retractor.
- 20 33. An assembly as claimed in claim 32 wherein device is mounted to the retractor.
- 25 34. A method of performing hand assisted surgery comprising the steps of:-

providing a device as claimed in any preceding claim; and

inserting a hand into the device against the biasing of the sealing member whilst maintaining substantial sealing engagement between the sealing member and the surgeon's hand/arm.

5 35. A method of performing a surgical procedure comprising the steps of providing a device as claimed in claim 1 and inserting an object into the device against the biasing of the sealing member whilst maintaining sealing engagement between the sealing member and the object.

10 36. A method as claimed in claim 35 wherein the object is a surgeon's hand/forearm.

37. A method as claimed in claim 35 wherein the object is an instrument.

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